REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Amendments to Claims

Non-elected claims 1-19 have been canceled. The cancellation is without prejudice or disclaimer.

Claim 22 has been amended to recite that the axial stack height of the magnetic core of the rotor is greater than that of the magnetic field structure. This addition is clearly supported by page 15, lines 27-29 of the original specification and page 16, lines 11-13 on page 16 of the substitute specification submitted on April 7, 2004.

In addition, in the interest of technical accuracy and to correspond better with the original specification, "electric field structure" has been changed back to –magnetic field structure–. The structure uses electricity to generate a *magnetic* field that interacts with the magnetic core of the rotor.

Finally, new claims 44 and 45 have been added to recite the multiple-section squirrel-cage rotor structure of original Fig. 16 and original claim 17.

2. Rejection of Claims 22-24, 27, 29, 34-36, 39, and 43 Under 35 USC §102(b) in view of U.S. Patent No. 3,165,656 (Korthaus)

Although the Applicant believes that the Examiner's interpretation of the claim language is unreasonable (*i.e.*, the Examiner's interpretation of varying electrical characteristics as corresponding to Korthaus' on/off switching), independent claims 22 and 36 have been amended to further recite that the axial height of the rotor is **greater** than that of the magnetic field structure (stator). Korthaus teaches **equal** height, and does not provide any reason for varying the height, as claimed, since Korthaus is not concerned with varying the electrical characteristics

of the device in the manner claimed. Therefore, the Korthaus patent does not anticipate or render obvious the invention as currently claimed.

As noted previously, the claimed invention provides for adjustment of the axial position of the rotor relative to the stator in order to change the electrical characteristics of the device "***in response to reverse torque resulting from interaction between said rotor, said magnetic field structure, and a load or driving device as the shaft rotates***," as **positively recited** in both independent claims 22 and 35. As a result, the invention provides a simple torque feedback control that is not even remotely suggested by any of the references of record, and that achieves the feedback control without the need for expensive and complex electronic sensors and feedback circuitry. Korthaus' on/off control certainly does not provide such electrical characteristic adjustment. To the contrary, Korthaus employs the usual configuration in which the rotor and stator have equal stack heights to optimize magnetic interaction between the rotor and stator. Since the displacement of Korthaus only occurs when the rotor is not turning varying the height of the rotor relative to the stator serves no obvious purpose in the motor of Korthaus, and therefore one or ordinary skill in the art would not have considered such a modification. Withdrawal of the rejection of claims 22-24, 27, 29, 24-26, 39, and 43 is therefore requested.

3. Rejection of Claims 22, 26-28, 31-33, 37, 38, and 40-42 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,700,268 (Joong) and 6,249,069 (Krueger)

This rejection is again respectfully traversed on the grounds that the Joong and Krueger patents both fail to disclose or suggest displacement of the rotor relative to the stator *as the shaft rotates*, as claimed, for the purpose of varying electrical characteristics of the machine, and further on the grounds that neither the Joong patent nor the Krueger patent discloses or suggests the **greater** rotor stack height current recited in both claims 22 and 35. With respect to the stack height, it is respectfully noted in the arrangement disclosed in the Joong patent, the total length of the rotor 20A and 20B ***equals*** that of iron core 10, while in the arrangement disclosed in the Krueger patent, the length of the rotor is actually ***less than*** rather than greater than that of the magnetic field core.

With respect to the Examiner's argument that Joong discloses "reverse torque" in col. 8, lines 10-12, it is respectfully noted that the reverse torque mentioned in col. 8 refers to the torque direction reversal that occurs when the device is operated as a motor rather than a generator. This has **absolutely nothing to do with** the claimed electrical characteristic adjustment resulting from displacement of the rotor in response to reverse torque caused by the presence of a load. The mere fact that the reference uses the words "reverse torque" is not sufficient to render obvious the claimed adjustment in response to reverse torque if the reference does not teach such an adjustment (instead, Joong teaches adjustment by an actuator 25).

Since the Krueger patent also teaches use of an actuator to change the relative position of rotor and stator, and furthermore does so by displacing the *stator* rather than the *rotor*, the combination of Joong and Krueger could not possibly have suggested the claimed invention (*the* actuator of Krueger is control assembly 46, which moves a stator sleeve 44, as explained in col. 4, lines 37-39 of the Krueger patent).

Because *neither* the Joong patent nor the Krueger patent discloses a reverse torque-displaced rotor, as claimed, but to the contrary teach an actuator-driven rotor (Joong) and an actuator-driven stator (Krueger), and because the Joong and Krueger patents respectively teach ***equal*** and ***less*** rotor-to-stator stack heights, rather than the claimed **greater** stack height, withdrawal of the rejection under 35 USC §103(a) is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

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